CHATTER TIE

OENKRAli IlKMAKKS ON I'llOIHKJKIl <JA$

THE gas producers or generators have as their function tho conversion of fuel from tho solid into tho gaseous state. Th<» practicability of this is ofierod by tho intrinsic property nf carbon (the principal constituent of ail our solid fuels), that it will combine with oxygon to form a combustible gas, carbon monoxide, CO.

It is this CO gas, the manufacture of which In producer,-; lias l)ocn practised of old, which forms the chief, and again the most valuable portion of tho constituents of producer gas. Carbon forms with oxygon, besides (JO, as is well known, a, second compound, carbon dioxide, OO.j, in technical language most often called carbonic acid. This is tho product of tho complete combustion of tho carbon which is capable of no further heat evolution, and which, therefore, is panned through tho chimney into the atmosphere as worthless, after one has more or less utilised this serviceable portions of its heat.

The action of carbon with oxygen results, first, in the formation of COji, the product of complete combustion ; but if thin carbonic acid comes in contact with heated carbon, it takes up carbon and becomes changed into the combustible gas (!<).

These observations indicate tho way in which one must proceed to obtain a good gaseous fuel from carbon in tho solid state. One must first burn tho carbon, whereby a largo amount of heat in evolved. If one then employs carbon in thick beds and forces tho products of combustion through these layers, they must become incandescent and capable of changing the carbon dioxide formed at tins beginning into carbon monoxide, it is, therefore, obvious that the layern should be of ample thickness in order to effect as completely as possible the conversion of tho whole of the COa formed.